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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,626

08/24/2006

John Richard Severn

5256-3

2296

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EXAMINER

LU, C CAIXIA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,626	<b>Applicant(s)</b> SEVERN ET AL.	
	<b>Examiner</b> Caixia Lu	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-33 is/are pending in the application.
- 4a) Of the above claim(s) 18 and 25-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 19-24 and 29-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 17, 19-21, 22-24 and 29-33 rejected under 35 U.S.C. 103(a) as being unpatentable over Sacchetti et al. (US 5,698,487) in view of Wu et al. (US 6,555,494) and Sangokoya et al. (US 5,565,395) for the same rationale as set forth in the previous Office Action mailed May 14, 2008.

### ***Response to Arguments***

3. Applicant's arguments filed September 3, 2008 have been fully considered. The rejection under 35 U.S.C. 112, second paragraph are withdrawn in view applicants' Remark, however, the rejection under 35 U.S.C. 103(a) of record are maintained.

First, Applicants argue that Sacchetti does not disclose the metallocene complexes of the instant claims. This is correct. However, those metallocene complexes of the instant claims are disclosed in the secondary references, Wu and Sangokoya, as shown in the previous Office Action. It is the combined teachings of Sacchetti, Wu and Sangokoya render the instant claims obvious.

Second, Applicants argue that Sacchetti's metallocene complex is preactivated with triisobutylaluminum before it is put on the support. This is not correct. Sacchetti's discloses that the metallocene compounds are sparingly soluble in hydrocarbons, their solubility increases considerably if the solvent contains a dissolved alkyl-Al compound such as triethyl-Al and triisobutyl-Al (col. 5, lines 60-67). For example, when the less

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soluble metallocene complexes such as ethylene-bis-indenyl zirconium dichloride is contacted with triisobutylaluminum, the chloride group on the metallocene complex is replaced with isobutyl and converts to ethylene-bis-indenyl zirconium di(isobutyl) which is readily soluble in the hydrocarbon solvent such as hexane as shown at least in Sacchetti's Example 1. Metallocene complex such as ethylene-bis-indenyl zirconium di(isobutyl) is not activated until it is contacted with an activator such as the adduct support activator of spherical  $\text{MgCl}_2 \cdot 3\text{EtOH}$ /trialkylaluminum and alumoxane.

Third, Applicants argue that Sacchetti's metallocene complex is only active towards polymerization if used in combination with methylalumoxane, whereas the presently claimed catalyst system is free of MAO. Applicants' attentions are directed to Applicants argue that Sacchetti's Example 8, where a MAO free catalyst composition is used to provide an ethylene-butene copolymer (col. 13, lines 44-50).

Lastly, applicants argue that the presently claimed catalyst is not a metallocene and consequently there is no motivation to combine Sacchetti with Wu and Sangokoya. On the contrary, the elected catalyst transition metal complex represented by formula (III) contains a cyclopentadienyl group and Cr, such a complex is a cyclopentadienylide ( i.e. metallocene) by definition. Therefore, it is proper to combine the teaching of the above cited prior art.

In view of the foregoing the rejections are still deemed proper and thus maintained.

***Conclusion***

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached on 9:00 a.m. to 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Caixia Lu/  
Primary Examiner  
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